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Subjects: [Software reviews](#), [Software packages](#), [Internal controls](#), [Flowcharts](#), [CPAs](#), [Advantages](#)

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With the recent introduction of flowchart-drafting software, accountants are increasingly using flowcharts and pictures to study clients' internal control systems. In most cases, flowchart software is easy to use - much easier than most word processors. There are several presentation features to consider when selecting a flowcharting software product. With some products, the data can be exported directly into a desktop publishing program, either for presentation graphics or to reproduce the results in a more formal printed format. Products differ in the type of on-screen views they display. Some allow the user to turn off menu displays so only an uncluttered view of the flowchart is seen on the screen. Others allow the viewer to examine multiple flowcharting on one screen.

**Full Text** (647 words)*Copyright American Institute of Certified Public Accountants Dec 1992*

The recent introduction of computer programs that draw flowcharts has made some aspects of CPAs' work easier and more effective. In this article, Ralph E. Viator, CPA, PhD, an associate accounting professor at the [University of Kentucky](#), Lexington, and Robert A. Deutsch, CPA, PhD, an assistant accounting professor at [Marshall University](#), Huntington, West Virginia, examine five popular flowchart software programs.

Flowcharts have many uses in the accounting profession. They can describe complex business structures with organizational charts or workflow procedures in easy-to-understand graphics. In fact, Statement on Auditing Standards no. 55, Consideration of the Internal Control Structure in a Financial Statement Audit, which requires independent auditors to understand a client's internal control systems before planning a financial statement audit, recommends that auditors use such tools as flowcharts, questionnaires and decision tables when documenting large, complex systems.

Because preparing flowcharts for internal control systems by hand is slow and painstaking, CPAs usually avoided them. However, with the recent introduction of flowchart-drafting software, accountants are using them increasingly.

By using pictures to identify the separate internal control elements, viewers can better comprehend the large integrated internal control systems and more easily spot weaknesses in the design and figure ways to correct them.

## EASE OF USE

In most cases, flowchart software is easy to use—much easier than most word processors. After learning a few basic commands, the auditor can quickly produce and print presentation-quality flowchart documentation. The programs make it particularly easy to revise previous drafts, which is helpful when dealing with clients. For example, the auditor can draw a first draft, present the flowchart to the client and quickly modify it after getting feedback. This ease of revision has an obvious advantage for return engagements, when the auditor can access the previous year's internal controls flowchart and update it.

Most flowchart programs are menu-driven. The user simply identifies where a symbol should be placed, selects the desired flow-charting symbol from a menu on the screen, enters text describing the specific symbol or function (for example, a purchase order) and then moves on to the next symbol. The number of available symbols in a software product varies from 7 to 35 (for a comparison of software features, see exhibit 1, page 118). (Exhibit 1 omitted) Also, the number of available symbol sizes varies from product to product. In addition, the programs differ in how they support text entry. Some will center text within a symbol and automatically wrap text within that symbol. Others simply place the text as entered and require the user to hit the return key, thus turning a line, to avoid having the text overflow the symbol.

Automatic rerouting of lines is very helpful when revising flowcharts. For example, a client reviews an auditor's first draft of an internal control system and says the flow of a document is incorrect and must be drawn to flow to a different department. With automatic rerouting, the auditor simply moves the relevant symbol to a new destination and the software adjusts the connecting line accordingly. Without this feature, the line connecting the two symbols would have to be redefined.

There are a number of presentation features to consider when selecting a flowcharting software product. Most products will print flowcharts in both portrait (8-1/2" wide by 11" deep) and landscape (11" wide by 8-1/2" deep). With some products, the data can be exported directly into a desktop publishing program, either for presentation graphics or to reproduce the results in a more formal printed format.

The products also differ in the type of on-screen views they display. Some allow the user to turn off menu displays so only an uncluttered view of the flowchart is seen on the screen. Others allow the viewer to examine multiple flowcharting on one screen.

CPAs should become acquainted with flowcharting software. The programs are powerful tools that are easy to use, making the professional more productive.

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... connectivity • Programmable using included ioControl™ **flowchart-based** control software • Simultaneous communication using Modbus/TCP, **XML**, SNMP, SMTP ...  
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2. [RADRunner](#)

... The formal **XML** language Playwright underlying RADRunner is simpler and ... powerful approach than standard workflow products (which are typically **flowchart-based**): ...  
[www.rolemodellers.com/html/radrunner.html](http://www.rolemodellers.com/html/radrunner.html) - 30k - [Cached](#)
3. [PRESS RELEASE \(PRWEB Newswire\) ENGENIC ANNOUNCES THE RELEASE OF ...](#)

... to speech, voice recognition, call monitoring and **XML**." TeleFlow 2004 ... Additional features include: - Highly intuitive, **flowchart-based** application development ...  
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4. [RIA02000 Guidelines for Final Submission of Articles \(PDF\)](#)


... form of executable application, generated automatically from the **XML** knowledge base. ... are model-centric: a compact (often **flowchart-based**) conceptual model ...  
[nb.vse.cz/~svatek/ijmi03fi.pdf](http://nb.vse.cz/~svatek/ijmi03fi.pdf) - [View as html](#)
5. [Control - Product Round-Up \(Part 1 of 3\):](#)


... Support of **XML**, SQL, SOAP, and SMTP provides direct access to plant data ...  
<http://www.EasyDeltaV.com>  
Free Software With I/O **Flowchart-based** ioControl programming ...  
[www.controlmagazine.com/web\\_first/ct.nsf/ArticleID/DFUO-5K6268/](http://www.controlmagazine.com/web_first/ct.nsf/ArticleID/DFUO-5K6268/) - 13k - [Cached](#) - [More pages from this site](#)
6. [Microsoft BizTalk Orchestration \(PDF\)](#)


... XLANG is an **XML**-based compiled BizTalk application. ... It utilizes a **flowchart-based** approach for designing (orchestrating) long running B2B scenarios. ...  
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7. [SNAP Application Guide \(PDF\)](#)


... Powerful controllers run **flowchart-based** control logic for complex control requirements ... up/PPP  
Network communication protocols SNMP, SMTP, HTTP, **XML** Or Receives ...  
[www.opto22.com.hk/PDF/SNAP\\_Application\\_Guide\\_1368.pdf](http://www.opto22.com.hk/PDF/SNAP_Application_Guide_1368.pdf) - [View as html](#) - [More pages from this site](#)
8. [Opto22 SNAP Ultimate I/O Solutions](#)


... Ethernet connectivity, programmability, and built-in enterprise connectivity using **XML**. The brain is programmed using **flowchart-based** ioControl programming ...  
[www.inotek.com/Catalog/opto5cn.html](http://www.inotek.com/Catalog/opto5cn.html) - 27k - [Cached](#)


9. [A Visual Authoring Environment for Multimedia Presentations on ... \(PDF\)](#) 


... representation highlighting media sequencing, and an **XML**-based description ...  
 Macromedia  
 Authorware [3] uses a **flowchart-based** paradigm where media objects are ...  
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... Programmabile tramite il software **flowchart-based** ioControl™. Comunicazioni simultanee  
 tramite Modbus/TCP, **XML**, SNMP, SMTP, e altri protocolli application ...  
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11. [Project Presentation Day: Computer Science](#) 


... Venice/Center/Projects/MQP/Transcription/ 11:15 LSATAB: A **Flowchart-Based** Visual Programming ... 1:15 RAINSTORE: Storage Manager for RAINBOW **XML** Query System  
 Adam ...  
[www.cs.wpi.edu/Programs/mqps/mqp-present03.html](http://www.cs.wpi.edu/Programs/mqps/mqp-present03.html) - 9k - [Cached](#)
12. [enGenic Corporation: What's New](#) 


... text to speech, voice recognition, call monitoring and **XML**." ... Additional features include: • Highly intuitive, **flowchart-based** application development ...  
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... o Longer history and more widely known o Open specification **XML** advantages: o More ... 4.  
 Create a **flowchart**: Based on instruction document and testing generate a ...  
[www.public.iastate.edu/~crieck/documents/Classes%20&%20Projects/Senior%20Design/design%20doc.pdf](http://www.public.iastate.edu/~crieck/documents/Classes%20&%20Projects/Senior%20Design/design%20doc.pdf) - [View as html](#)
14. [WPI: News & Events - Project Presentation Day - Computer Science](#) 



... 11:15 am, Fuller Labs, Room 311 LSATAB: A **Flowchart-Based** Visual Programming ... pm, Fuller  
 Labs, Room 311 RAINSTORE: Storage Manager for RAINBOW **XML** Query System ...  
[www.wpi.edu/News/PPD/cs.html](http://www.wpi.edu/News/PPD/cs.html) - 17k - [Cached](#)
15. [Indusoft](#) 

... to industry standards such as Microsoft DNA, OPC, DDE, ODBC, **XML**, SOAP and ... based PLC  
 controls, Think & Do and Steeplechase for **flowchart-based** control, ISaGRAF ...  
[www.indusoft.com/press\\_release\\_webstudio\\_wireless.asp](http://www.indusoft.com/press_release_webstudio_wireless.asp) - 11k - [Cached](#)
16. [SNAP Application Guide \(PDF\)](#) 

... electromagnetic interference. Powerful controllers run **flowchart-based** control logic for complex control requirements. Control functions ...  
[www.kms.ch/pdf/1368\\_SNAP\\_Application\\_Guide.pdf](http://www.kms.ch/pdf/1368_SNAP_Application_Guide.pdf) - [View as html](#)
17. [Machine Design: I/O, control, networking in one.\(Snap Ultimate ...\)](#) 

... also supports the simultaneous use of multiple application-level protocols, including Modbus/TCP, **XML**, and SMTP for email. **Flowchart-based** control-programming ...  
[www.findarticles.com/cf\\_dls/m3125/13\\_73/77083773/p1/article.jhtml](http://www.findarticles.com/cf_dls/m3125/13_73/77083773/p1/article.jhtml) - 10k - [Cached](#)
18. [HANDBOOK OF SOFTWARE ENGINEERING AND KNOWLEDGE ENGINEERING \(PDF\)](#) 

... importance of web-based multimedia applications that are portable between multiple

- platforms, XML-based approaches ... In icon or **flowchart-based** systems like ...  
[www.upb.de/cs/ag-engels/Papers/2002/EngelsSauerHB-SEKE.pdf](http://www.upb.de/cs/ag-engels/Papers/2002/EngelsSauerHB-SEKE.pdf) - [View as html](#)
19. [Health Care Technology](#)   
... Automating a shared **flowchart based** on sequenced tasks and teamwork could  
drastically ... less  
disruptive and costly alternative is to add an XML-based integration ...  
[www.hctproject.com/solutions.asp?slD=328&n=Workforce+Issues+in+Health+Care](http://www.hctproject.com/solutions.asp?slD=328&n=Workforce+Issues+in+Health+Care) - 37k -  
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20. [RichardBerg : CompSciAutobiography](#)   
... encountered programming in 4th grade, scripting those C64's into **flowchart-based**  
text adventures ... that I could write an installer using an XML transcoder, and ...  
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... database integration, text to speech, voice recognition, call monitoring and XML." ...  
Highly  
intuitive, unique, **flowchart-based** application development environment ...  
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22. [About Opto 22](#)   
... ☐ Develop your own control programs with easy-to-use, **flowchart-based** ioControl. ...  
OptoXML  
Tutorial Part 1: Building XML-Based Web Pages with SNAP Ethernet and ...  
[opto22.co.kr/kr\\_opto22/products/untimate/untimate\\_software.htm](http://opto22.co.kr/kr_opto22/products/untimate/untimate_software.htm) - 35k - [Cached](#) - [More pages from this site](#)
23. [SUEDE : A Wizard of Oz Prototyping Tool for Speech User ...](#) (PDF)   
... SUEDE uses XML as its file format, and file I/O is implemented on top of the Java XML Parser (JAXP 1.0.1 ... Page 8. **flowchart based** on the participants' responses ...  
[guir.berkeley.edu/projects/suede/pubs/suede-uist2000.pdf](http://guir.berkeley.edu/projects/suede/pubs/suede-uist2000.pdf) - [View as html](#)
24. [Re: How to describe Flowcharts, Schematics, etc from karl. ...](#)   
... person, after hearing a process described, could create a **flowchart based** on his ... to  
represent the abstract information (eg >organization chart) as XML and use a ...  
[lists.w3.org/Archives/Public/w3c-wai-ig/1999JulSep/0319.html](http://lists.w3.org/Archives/Public/w3c-wai-ig/1999JulSep/0319.html) - 20k - [Cached](#)
25. [Boxes and Arrows: Automating Diagrams with Visio](#)   
... really creating your flowcharts in Excel as much as creating a **flowchart based** on  
your ... We've done this integrated with FLASH/XML to create 3d site maps that ...  
[www.bboxesandarrows.com/archives/002572.php?page=discuss](http://www.bboxesandarrows.com/archives/002572.php?page=discuss) - 53k - [Cached](#) - [More pages from this site](#)
26. [Design](#)   
... Resources 38 1.4.1 Implementation Languages 38 1.4.1.1 HTML, XML and SGML ...  
1.4.2.2  
Timeline based Authoring Systems 54 1.4.2.3 **Flowchart based** Authoring Systems ...  
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... for easy creation of Business Processes using a **flowchart-based** process editor ...  
Flows  
Application adapters in Weblogic receive input and send output through XML. ...  
[www.hostbridge.com/white\\_papers/bea/weblogicWhitePaper.pdf](http://www.hostbridge.com/white_papers/bea/weblogicWhitePaper.pdf) - [View as html](#)
28. [Nematron Introduces the New 15" Delta Industrial PC with ...](#)   
... OPC, DDE, ODBC, HTML, XML, SOAP and ActiveX. OpenControl provides advanced  
PC-based  
Control using Nematron's patented **flowchart based** programming software as ...  
[www.automationtechies.com/store/pid1832.php](http://www.automationtechies.com/store/pid1832.php) - 24k - [Cached](#) - [More pages from this site](#)

29. [RealMarket Today: The Latest Breaking News in CRM.](#)   
... functions into simple-to-understand icons within a **flowchart-based** development environment. ... Epicor for Service Enterprises is a **XML** Web services enterprise ...  
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... that confront a company, the Framework uses a **flowchart based** on seven key ...  
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31. [THEY SAID IT November 2003 Volume 7 Number 11 ArchestrA in the ...](#) (PDF)   
... away from traditional □component□- based connectivity towards a unified architecture in line with the pattern set by its recent release of **OPC XML DA** which ...  
[www.iainsider.co.uk/IAINOV03.PDF](http://www.iainsider.co.uk/IAINOV03.PDF) - [View as html](#)
32. [OPTO 22 SNAP-IT™ PACKAGED ETHERNET I/O SYSTEMS](#)   
... you receive ioControl™ software, an easy-to-use **flowchart-based** environment for ... all popular LAN and WAN communication protocols, including **XML**, **SNMP**, **SMTP** ...  
[www.newark.com/product-details/text/CD121/59274.html](http://www.newark.com/product-details/text/CD121/59274.html) - 13k - [Cached](#)
33. [Flowchart programs for event-driven code?](#)   
... If I was going to produce a **flowchart based** upon user actions (key presses ...  
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... ability to save out a full snapshot of the design in an **XML** format to ... intercom, or phone, reading the prompts and following a script or **flowchart based** on the ...  
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